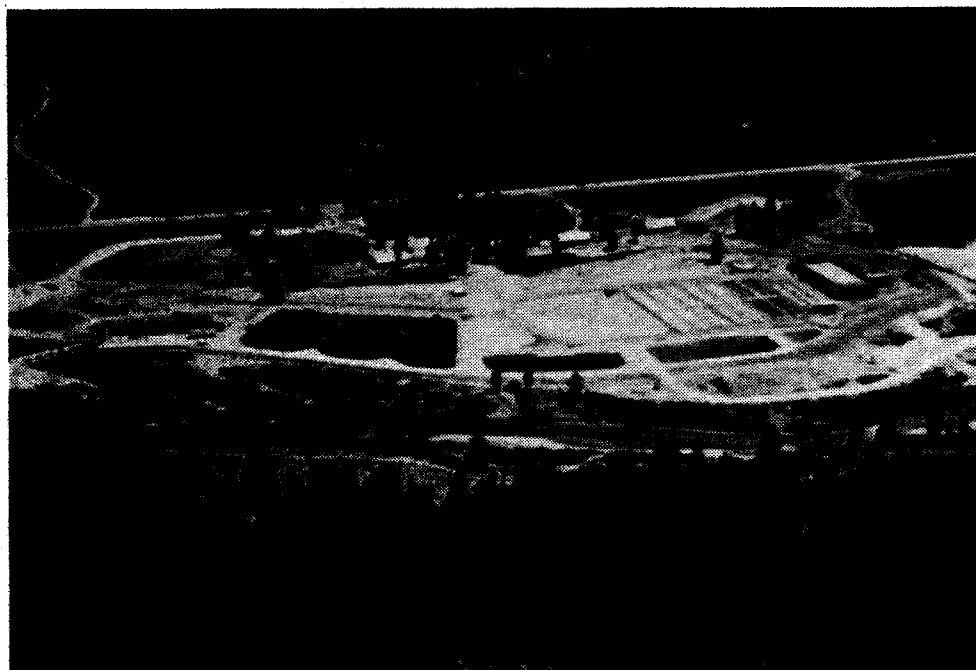




SAWTOOTH FISH HATCHERY

1986 SOCKEYE SALMON BROOD YEAR REPORT



By

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PROJECT AND HATCHERY DESCRIPTION

The Stanley Basin sockeye salmon (Oncorhynchus nerka) enhancement project is operated by Idaho Department of Fish and Game, and funded by the National Marine Fisheries Service in cooperation with the Sawtooth National Recreation Area. The intent of the project is to enhance the native run of sockeye salmon that use Stanley Basin spawning and rearing grounds. The current project has been in operation since 1985.

Trapping facilities for the 1986 returning adult sockeye were located in Redfish Lake Creek between Little Redfish and Redfish lakes and at Sawtooth Fish Hatchery. The Redfish Lake Creek trap was a steel weir and conduit system approximately 60 feet wide and 5 feet high. Trapped sockeye were held until sexual maturity in an earthen pond at Sawtooth Fish Hatchery. Eggs were incubated in an eight-tray Heath incubator receiving five gal./minute of filtered river water to simulate natural incubation temperatures; the effluent drained into a pipe bypassing the hatchery water supply system.

TRAPPING SUMMARY

The Redfish Lake Creek trap was put into operation July 7, 1986 and continued until September 17, 1986. The first sockeye was trapped on July 26 and the last was trapped on August 26 (Fig. 1). A total of seven males and 22 females were trapped, all of which were taken at the Redfish Lake Creek trap. The size of the adult sockeye ranged from 41 cm to 66 cm, with a mean fork length of 55 cm (Table 1).

PRESPAWNING MORTALITY

Prespawning mortality from undetermined causes resulted in the loss of nine females and four males and represented 45% of the total fish trapped.

SOCKEYE SPAWNING

Spawning operations began on September 24 and ended October 24. A total of 13 females and 3 males were spawned for a total of 31,594 eggs. Two females were live spawned on the first day due to the difficulty of determining ripeness. The method proved ineffective because of egg breakage and was discontinued. The remaining eggs were collected in a colander, using the incision method, and placed in a bucket to be fertilized. Eggs and sperm were mixed with approximately one cup of water and allowed to set for one to three minutes. The fertilized eggs were then rinsed, water hardened in 100 ppm Argentyne solution for one hour, and placed in incubator trays until hatching.

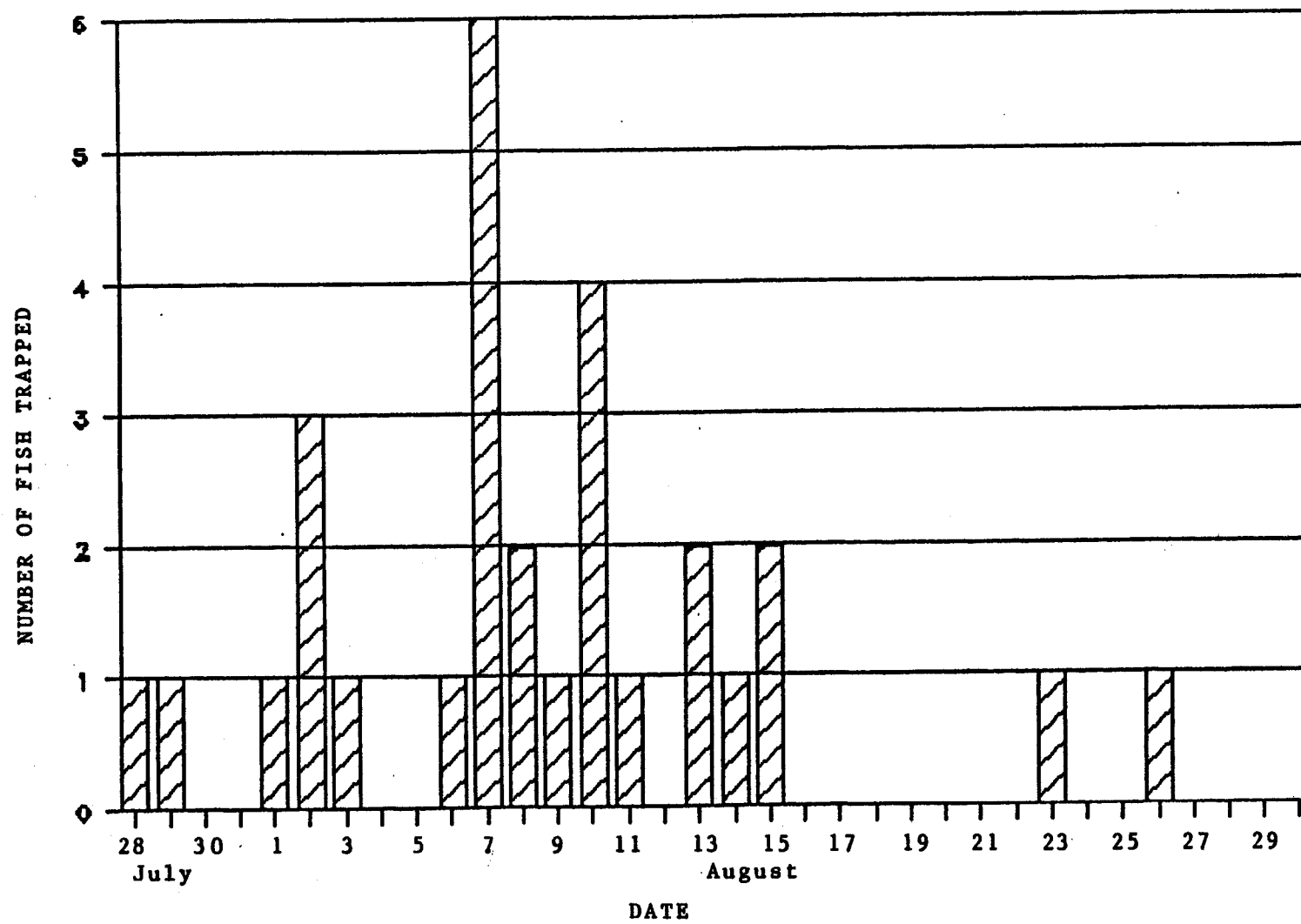


Figure 1. Redfish Creek sockeye salmon trap count, 1986.

Table 1. Length frequency distribution of Stanley Basin sockeye, 1986.

Length (cm)	Length (in.)	Fish trapped
41	16	1
48	19	2
51	20	4
53	21	6
56	22	7
58	23	3
61	24	3
63	25	1
66	26	2
Total		29

In an attempt to accelerate sexual maturity, two males were injected with gonadotropin. This experiment was discontinued when one of the males died prematurely.

INCUBATION

The incubator flow was set at five gal./minute with a maximum of 38 oz. (8,550 eggs) put into each tray. Eggs were treated with 1,667 ppm formalin using a 15-minute drip 3 times a week until they eyed. Incubation temperatures were adjusted to match natural conditions--so emergence would coincide with wild fish--which ranged from a minimum of 33 °F in January to 59 °F in May (Fig. 2). Average temperature units to eye-up were 550 and average temperature units to hatching were 840.

PLANTING

Survival from green egg to stocking was 44%. The total number of swim-up fry stocked was 13,800, with individual lots released between April 4 and May 11 in the eastern littoral zone of Redfish Lake. The fry were transported in a plastic bag containing water and oxygen tempered to the lake's water temperature and then released through a hole drilled into the ice.

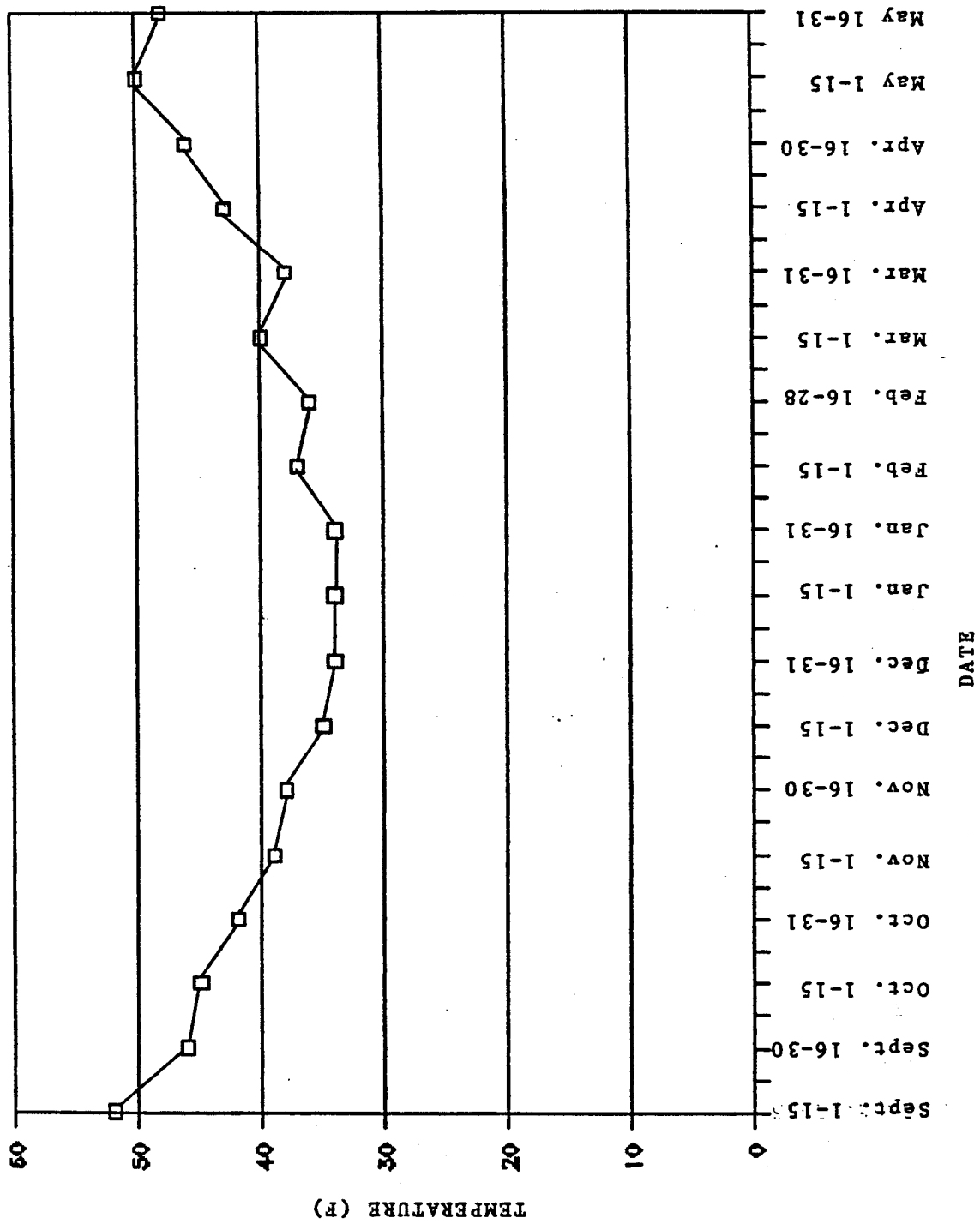


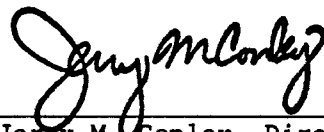
Figure 2. Two-week temperature averages for sockeye incubation, 1986.

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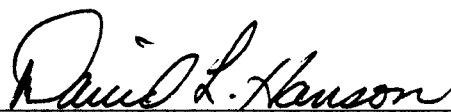
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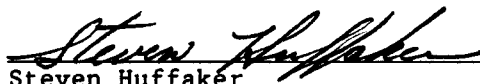
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